

**Home Science**  
**Question Paper 2016**

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**Maximum Marks: 70**  
**Time allowed: Three hours**

- Candidates are allowed additional 15 minutes for only reading the paper. They must NOT start writing during this time.
  - Answer Question 1 from Part I and five questions from Part II,
  - The intended marks for questions or parts of questions are given in brackets [ ].
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**Part-I (20 Marks)**  
**Answer all questions.**

**Question 1. [10 x 2 ]**

- (i) State any two points of importance of fiber (roughage) in our diet.
- (ii) Name one chemical preservative each for colourless fruits and coloured fruits.
- (iii) State any two precautions to be taken while baking.
- (iv) What special facilities can be provided to the elderly to make their life easy ?
- (v) Name two adulterants which may be found in coffee.
- (vi) State any two factors affecting the selection of clothes.
- (vii) Name any one sex hormone each in boys and girls, active during adolescence.
- (viii) Name any two food items which are endorsed with an Agmark.
- (ix) Why is toast easier to digest than plain bread ?
- (x) State a similarity and a difference between boiling and steaming.

**Answer 1.**

(i) Importance of fiber in our diet is :

1. Fiber adds bulk to the diet thus, it helps to maintain a healthy weight
2. It plays a useful role in stimulating the bowel movements of large intestine, so as to prevent constipation.

(ii) Potassium meta-bisulphite is a chemical preservative used for colorless fruits while Sodium Benzoate is a safe chemical preservative for colored fruits.

(iii) Two precautions to be taken while baking are:

1. Always preheat the oven.
2. Place the food properly and evenly in the oven so as to have a uniform temperature while baking.

(iv) Healthy diet and happy environment can be provided to the elderly to make their life easy.

(v) Chicory seeds and tamarind seed powder are two adulterants which may be found in coffee.

(vi) Climatic conditions and Occasion are two factors affecting the selection of clothes.

(vii) Testosterone in boys and estrogens in girls are sex hormones that are active during adolescence.

(viii) Spices and honey are two food items which are endorsed with an Agmark.

(ix) Roasting brings about dextrinization of starch cells thus, facilitating easier digestion, that is why when a slice of bread is toasted, it is digested easily as compared to the plain bread.

(x) Similarity : Boiling and steaming are both done with the help of water, hence the food cooked by these methods are light and are easily digestible.

Difference : Food is completely immersed in water while boiling , whereas the food does not come in direct contact of water when steamed.

**Part-II (50 Marks)**  
**Answer any five questions.**

**Question 2.**

- (a) Name the food items adulterated with mineral oil and starch. State their ill effects. [5]
- (b) What is meant by food adulteration ? Discuss the steps to be taken by the consumers to prevent themselves from buying adulterated food. [5]

**Answer 2.**

- (a) Edible oils are adulterated with mineral oils. They interfere with absorption of fat-soluble vitamins specially Vitamin-A.  
Milk and milk products like ghee, khoya, etc. are adulterated with starch which can

cause diarrhea due to the undigested starch in colon. It's accumulation in the body may prove fatal for diabetics.

(b) Food adulteration is the act of intentionally debasing the quality of food offered for sale either by the mixture inferior substances or by the removal of some valuable ingredient.

Adulteration of commonly used food is increasing at an alarming pace. The cost of food is forever increasing and the unscrupulous traders are indulging in malpractices to increase their profit margin.

Consumers should safeguard themselves from buying adulterated food in following ways:

1. Buy from standard and reliable brands of food.
2. Do not buy loose foodstuffs as it is easier to adulterate them than to tamper with the packed food.
3. Study the label and the standard mark before purchasing the food.
4. Always check the date of manufacturing and the date of expiry of the food before purchasing.

**Question 3.**

- (a) What are the benefits of using combination of food in our diet ? [5]  
(b) Discuss any five reasons for cooking of food. [5]

**Answer 3.**

(a) Combination of food in our diet is done for the following reasons:

1. Meat is an expensive protein food. So, economy can be brought substituting it partially by texturised soyabeans.
2. Better nutritive value cereals are deficient in lysine and pulses are deficient in methionine. Combination of cereals and pulses improve the nutritive content in the food.
3. Variety of cereals combine well with milk. They compliment and improve the protein and calcium content e.g., kheer, custard, dalia. etc.
4. For healthy living and desirable change in food habits for e.g. Iron and calcium content can be improved by combining greens with meat, paneer and potatoes e.g., mutton biryani, dal saag and vegetable rice.

(b) Food is cooked for the following reasons :

Improves digestibility : Hard grains like beans, peas and block grains are cooked to soften them. The digestive juice penetrates easily into the tender and soft grains ensuring total utilisation of proteins and carbohydrates present in them.

Changes taste, flavor and palatability : Cooking changes the taste of food. Fish and meat odours undergo a tremendous improvement in flavor and degree of palatability by cooking.

Increases nutrient availability : Dais, legumes and soyabeans contain trypsin inhibitor. It gets destroyed by dry as well as wet cooking methods thus increasing the nutrient availability,

Makes food safe and increases shelf life : Raw food starts getting spoilt and perishes in due course such as e.g., tomatoes. If you cook, they will last longer in the form of ketchup or puree. Milk has a tendency to go bad on account of bacteria, which gets killed on boiling and lasts longer as compared to raw milk.

Provides variety : Consumption of food in only one form will make it monotonous. Cooking food in different forms provide variety for e.g., wheat can be eaten in the form of dalia, parantha, chapati etc. It avoids repetition of one form of food.

#### **Question 4.**

Dramatic development during adolescence brings important changes and modification in the lives of the adolescents. In this context, elaborate :

- (a) Considerations of personal hygiene during adolescence. [5]
- (b) Features of language development during adolescence. [5]

#### **Answer 4.**

(a) Personal hygiene entails more than just being clean. It includes many practices that help people stay healthy. Many of the health problems that adolescents face are linked to their activities and habits. Adolescents are active while playing, (exercising,, exploring the world, carrying out science activities which brings them in contact with dirt, germs and chemicals. They need to be aware of the harm that these can cause and how simple measures like washing hands repeatedly can prevent diseases (sometimes fatal) like typhoid, cholera, worm infestation etc, from spreading.

Adolescents also need to know how to take care of their evolving and changing bodies. Bathing daily with soap and water, maintaining dental and oral hygiene taking care of eyes and ears and grooming are some of the activities that adolescents need to carry out. Adolescents who maintain personal hygiene are less pre-disposed to skin infections and other communicable diseases.

(b) Although the majority of language development occurs in infancy and pre-school years, development continues through adolescent years. Linguistics development during this time is subtle but important. This development includes learning to use more complex language and to communicate differently depending on the situation. At this time, children grow their vocabulary and learn the proper and underlying use of each word. They also develop syntactic sentence formation. Adolescents use of language also reflects their sensitivity to how their peers perceive them. For example, to use foul language in an attempt to fit into peer group or to prove he is tough enough.

**Question 5.**

Discuss the following :

- (a) Use of defective weights and measures. [5]
- (b) Hoarding and black marketing. [5]

**Answer 5.**

(a) Use of false weights and measures is a common malpractice some traders adopt while selling goods. Goods which are sold by weight, (Kg) or those sold by measures (meters) are sometimes found to be less than the actual weight or length. Sometimes, packaged goods and sealed containers (tins) contain fewer quantities than what is stated on the label or the packet. Sweets are often weighed along with the cardboard box, which may weigh 50-100 gms. You pay for it at the same price as the sweets. Also, false meters that show zero reading at petrol pumps are used for the purpose of earning profits and cheating buyers.. Very often, the weights may have dents, hollow space or the weighing balance may not be used properly, resulting in weighing less than the actual weight.

(b) Hoarding and black marketing is a serious problem faced by the consumer. When any essential commodity is not made available in the open market and stocks are intentionally held back by dealers, it is known as hoarding. Its purpose is to create artificial scarcity to push up the prices. Black marketing is the illegal business of buying and selling hoarded goods, secretly at a higher price. Many times, product prices are raised by temporarily reducing the supply of their goods in the market, thus causing artificial scarcity. These practices are usually adopted, just before the government announces the budget.

**Question 6.**

- (a) Suggest any five points to be kept in mind while planning a diet for a pre-school child. [5]
- (b) Discuss the importance of a balanced diet during adolescence. [5]

**Answer 6.**

(a) Five points to be kept in mind while planning a diet for a pre-school child are :

1. Meals should be served at regular intervals in a pleasant way.
2. Pre-schoolers enjoy colorful meals and that should be taken care of.
3. Favorite foods should not be served too often at the cost of nutrients.
4. It should supply adequate amounts of essential nutrients as calcium, phosphorus, protein, Vitamin A, Vitamin B, Vitamin C and Iron.
5. It is good to give appetizing beverages such as fruit juices and flavored milk to the children. Part of milk can be served in the form of curd/buttermilk, kheer, custard, ice-cream etc.

(b) Healthy eating during adolescence is important as the changes in the body during this time, affect an individual's nutritional and dietary needs. Adolescence is characterised by growth spurt, a period in which growth is at maximum. Teenagers need more calories and nutrients than any other age group to support their growing bodies and to prevent future health problems.

**Question 7.**

In order to make intelligent choices, consumers must know their rights and responsibilities. In this context, discuss :

- (a) The rights of consumers [5]
- (b) The responsibilities of consumers [5]

**Answer 7.**

(a) Consumers have the right to :

**Basic needs :** This refers to the fulfillment of needs not only to survive but also to lead a dignified life. These needs include food, shelter, clothing, electricity, safe water, education and medical care.

**Safety :** It refers to the right to be safe-guarded against items, products, processes and services which are hazardous to health or life.

**Be informed :** It indicates the right to be given the basic information needed to make a wise choice.

**Choice :** The consumers must be given adequate number of alternatives of reasonable quality and price so that they can select the most appropriate item.

**Be heard :** This gives the consumers the right to represent and put forth their voice. The consumer's genuine grievances help manufacturers to improve the quality of their products.

(b) The responsibilities of consumer are as follows:

1. To read the information while purchasing, acquiring or using various goods and materials.
2. The consumer must choose wisely and Check the product for the standardization rpark.
3. Only the quality goods that are not hazardous should be procured. It is consumer's responsibility to use the products that are safe.
4. Seek redressal in case of dissatisfaction – The responsibility for reporting malpractices and voicing legitimate complaints also lies with the consumer.
5. Get a bill for every important purchase with the warranty card.

**Question 8.**

- (a) Explain the steps involved in washing of lace items. [5]  
(b) State the procedure to be followed for the washing of silk garments. [5]

**Answer 8.**

(a) The steps of washing lace items are : Lace articles are very delicate and valuable and need proper care to preserve their appearance and to prolong their life.

1. Lace articles are washed in luke warm water. Very dirty laces are washed in borax solution(2 tsp. in 1/2 pint of water).
2. Silk laces are put in broad-necked bottle containing soap solution.
3. The bottle is then closed and shaken to clean it.
4. The laces take out and rinsed.
5. To remove out extra water, the lace is wrapped in towel.
6. They can be given slight crispness by gum water, rice water, starch etc. It should be ironed when half dry. After properly clipping to any base.

(b) The procedure to wash silk garments is :

**Preparation :** Examine the garment for tears, holes, stains and foreign particles and give suitable treatment accordingly.

**Steeping :** Steeping of silk is avoided due to its weak strength when wet. If the garment is heavily soiled, steeping can be done in lukewarm or cold water for very short time.

**Washing :** Wash gently using kneading and squeezing method. In much soiled areas like neckline, elbow, cuffs etc. a gentle scrubbing with flat hand can be done. Extra soap water should be removed by gentle squeezing.

**Rinsing :** Rinsing should be done in clear soft tap water, until soap is removed properly from the garments. Last rinse is given to silk by adding vinegar for increasing luster.

Stiffening : Since silk is very soft and pliable, it requires a treatment of gum water to give stiffness, proper shape, body and shine.

Drying : Coloured silk should be dried in shade and white silk in sunlight. All the garments should be properly ironed before they are completely dry.

Ironing : Ironing of silk should be done at 300° F.

### **Question 9.**

Write short notes on any two of the following :

- (a) The influence of sports and exercise on the physical fitness of adolescents. [5]
- (b) Kitchen hygiene during food preparation. [5]
- (c) The requisites of a good label for pre-packaged food and its importance. [5]

### **Answer 9.**

(a) Physical exercise is considered important for maintaining physical fitness including weight building and maintaining healthy bones, muscles, and joints, promoting physiological well-being, reducing surgical risks and strengthening the immune system. While exercising, it is important to have a good diet to ensure that body has the proper ratio of macro-nutrients and micro-nutrients.

This is to aid the body with the recovery process following strenuous exercise because when the body falls short of proper nutrition, it gets into starvation mode and depends onto the fat content for survival. Like exercise, proper rest and recovery is also important for health, otherwise the body exists in a permanently injured state and will not improve or adapt adequately to the exercise.

(b) Kitchen hygiene is a very important part of food hygiene and the following points must be taken care of:

1. A dry and well lit kitchen keeps insects and pests away.
2. The kitchen should be fly proof and hence, have a mesh on its doors and windows.
3. The dustbin should have a liner and it should be emptied out each day.
4. The kitchen work surface and floors should be easy to maintain and clean.
5. Remove all food scraps immediately to keep away cockroaches and rodents.
6. Keep kitchen cloth clean, wash them with a good detergent and dry them in sunlight.

(c) The requisites of a good label for pre packaged food are:

1. Name of the product
2. Brand name

3. Manufacturer's name and address
4. Contents! Ingredients
5. Warning / Precautions
6. Date of manufacture and expiry
7. Net weight) Volume
8. Maximum Retail Price
9. Directions of use
10. Standardized mark.

They are important as they guide consumers in selectiniz and buying the correct product.